Form PTO-1449 FEB 0 2 2004 RMATION DISCLOSURE CITATION
RACEST APPLICANT

(USE SEVERAL SHEETS IF NECESSARY)
Page 1 of 6

U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE

ATTY. DOCKET NO. 35089US1

SERIAL NO. 10/698,118

APPLICANT:

Kulbinder K. Banger et al.

FILING DATE:

GROUP ART UNIT: 1621

					October	31, 200	3 n	ot ye	assigned		
			U.S. P	ATENT DOCUM	ŒNTS						
Examiner Initial		Document No.	Date	Name		lass Subc		Filing Date If Appropriate			
	Α		· · · · · ·								
	В										
	С	•				<u> </u>					
FOREIGN PATENT DOCUMENTS											
		Document No.	Date	Country	Cla	iss Si	Subclass		Franslation		
	D										
OTHER REFERENCES (Including Author, Title, Date, Pertinent Pages, Etc.)											
b	E		Contreas, M., et al., "Progress Toward 20% Efficiency in Cu(In,Ga)Se2 Polycrystalline Thin-Film Solar Cells", <i>Prog. Photovolt. Res. App.</i> , 1999, 7, pgs. 311-316.								
	F			a Solar Array Earth-Cand Tech. Conf., 2001		on Appli	ability	Assess	sment", XVII		
P	G	Bailey, S.G., et al.	, "Space Pho	otovoltaics", Prog. Ph	otovolt. Re	es. App.,	998, 6,	1-14.			
p	Н			ment of CIS Solar Co Energy Conf., Vienn			ations",	Eds.	Schmid, J., et		
	I			(ultinary Solar Cells l vence, 1993, ABSTRA		ùInSe₂",	Proc. 23	rd IEE	E E		
4	J	Basol, B.M., et al. Precursors", J. of	, "Cu(In,Ga) Vacuum Scie	Se ₂ Thin Films and S nce and Technology	Solar Cells A, 1996, 1	Prepared 4A, pgs. 2	by Seler 2251-22:	izatio 56.	on of Metallic		
A	K			Process for High Effic Solid Films, 2001, 38			Develop	ment	Towards		
#	Ľ			y and Pilot Operation 198, 6, pgs. 193-199.	in Solar (Cells of C	ıInSe₂ aı	nd Th	eir Alloys",		
Examiner	: /	Afirio Mazz	erio Ilo	ngalez D	ate Consid	ered	11/17	104	Z		
*Examine	er.			s of whether citation is in c Include copy of this form					ough citation if		

Form PTO-1449 U.S. DEPARTMENT OF COI PATENT AND TRADEMARI					ATTY. DOCKET NO. 35089US1				SERIAL NO. 10/698,118		
	n m	DRAATION DISC	I OSLIDE CIT	· A TIONI	APPLICA	NT:					
017	, TINLÍ	ORMATION DISC BY APPL	ICANT			Kulbi	nder	K. Ba	nger	et al.	
FEB 0 2	2004	VSE SEVERAL SHEE Page 2		K <i>I)</i>	FILING DATE: GROUP A						
					Octob	er 31,	2003		UNIT: 1621 not yet assigned		
RADEM	AER'S	<u></u>					<u>.</u>				
			U.S. P.	ATENT DOCUM	ŒNTS						
Examiner Initial		Document No.	Date	Name	Class S			Subo	Subclass Filing Appr		
	Α										
	В				_						
	С	·									
			FOREIGN	N PATENT DOC	UMEN	ΓS				·	
		Document No.	Date	Country	(lass	Sut	class	7	Franslation	
	D									·	
		OTHER REFE	RENCES (In	cluding Author, Titl	e, Date, l	Pertine	nt Pag	ges, Et	c.)		
*	E			of CuInSe ₂ Films an ounds", <i>Sol. Energy</i>							
D	F			ation and Componer id Films, 2001, 387,			п Ртос	esses	in Ele	ctrodeposited	
1	G			Film CIS Alloy PV N Thin Solid Films, 200				sing N	on-Va	acuum,	
b	Н	Klenk, M., et al., Thin Solid Films,		f Flash Evaporated C gs. 47-49.	halcopyı	ite Abs	sorber	Films	and S	olar Cells",	
1	I			ation During the Re , 1997, 299, pgs. 38		ınealin	g of C	ù-In F	ilms i	n H ₂ S	
b	J	Krunks, M., et al. Thin Solid Films,		on and Structure of C pgs. 61-64.	ZulnS₂ Fi	lms Pre	epared	by Sp	ray Py	rolysis",	
A	К	Artaud, M.C., et a	-	Thin Films Grown b gs. 115-123.	у МОСУ	D: Ch	aracte	rizatio	n, Fir	st Devices",	
<i>b</i>	L	Jones, A.C., et al. Application", VC		mpound Semicondu 7, pgs. 42-99.	ctors: Pr	ecurso	rs Syn	thesis,	Deve	lopment &	
/	М			of Copper-Indium- n. Let., 1988, pgs. 18			ms by	Solut	ion Py	rolysis of	
Examine	r: //	rpine Maza	ris In	gally D	ate Cons	idered	1	1/27	1/04	K.	
*Examin	er:	Initial if reference con	sidered, regardles	s of whether citation is in o Include copy of this form	conformance with next c	with Mi	PEP 609 ation to); Draw applica	line thro	ough citation if	

	449		ATTY. DOCKET NO. SERIAL NO. 10/698,118										
		BOA A TION DICC	OSIDE CI	ration!	API	LICAN	T:						
/0	/11/21/X	BY APPL	ICANT			K	Culbii	nder	K. Ba	nger	et al.		
E FEB	(USE SEVERAL SHEETS IF NECESSARY) Page 3 of 6 Page 3 of 6						FILING DATE:				GROUP ART UNIT: 1621		
PRITERY. S	A PLOTE	MEL CO	_		Oc	tober	31, 2	2003	n	o t ye l	assigned		
			U.S. P	ATENT DOCU	MEN	TS							
Examiner Initial		Document No.	Date	Name			Ci	ass	Subc	lass	Filing Date If Appropriate		
	A												
	В												
	С												
			FOREIGN	N PATENT DOC	CUM	ENTS	S						
		Document No.	Date	Country		Class Subcla		class	ass Translation				
	D												
		OTHER REFE	RENCES (In	ncluding Author, Tit	le, Do	ite, Pe	rtiner	ıt Pag	ges, Etc	c. <i>)</i>			
þ	E			Sulphur-Containin nin Films", <i>Polyhed</i>						for P	recursors of		
b	F			n of CulnS ₂ Thin Fi Mater. Chem., 1992,				urce l	MOCV	D Pro	cess Using		
b	G			n of CuIn ₅ S ₈ Thin F d Films, 1992, 209,				шсе	Organ	ometa	llic Chemical		
1	H			Mixed Copper-Indiculn Q_2 (Q = S, Se),									
1	· I			ray CVD of Copper caphic Orientation",									
b	J			ray Chemical Vapo ces", Mat. Res. Soc.									
k	K			gle Source Precurson c. of the 28th IEEE I									
b	L		Deposition o	Synthesis and Chara of Ternary Chalcopy 7-3829.									

*Examiner:

Initial if reference considered, regardless of whether citation is in conformance with MPEP.009; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

Form PTO-1	MENT OF COMMERCE TRADEMARK OFFICE	ATTY. DOCKET NO. SERIAL NO. 10/698,118						· - I				
6	Pak	DEMATION DISC	I OSIDE CIT	ΓΔΤΙΩΝ	APPLICANT:							
	INT	BY APPL (USASEVERAL SHEE	ICANT		Kulbinder K. Banger et al.							
FEB (JING :			U.	GROUP ART UNIT: 1621						
E.	10:12E	49		Oc	tober	31, 2	003	471	ot ye	assigned		
			U.S. P	ATENT DOCUM	ŒN'	TS					· ·	
Examiner Initial		Document No.	Date	Name			Class S			lass	Filing Date If Appropriate	
	Α											
	В			<u>-</u>								
	С											
FOREIGN PATENT DOCUMENTS												
		Document No.	Date	Country	_	Cla	Class Subcla		class	1	Translation	
	D			<u> </u>								
	<u></u>	OTHER REFEI	RENCES (In	cluding Author, Title	e, Da	te, Per	rtinen	t Page	es, Etc	:)		
	E			l Routes to Nanocrys Washington Univer			Thin-	Film	III-VI	and l	I-III-VI	
A	F			arameters from Ham Bond Energies", <i>Inor</i>							e of E and C	
1	G	Chemical Vapor l	Deposition Ai	opment and Synthesi ded by Thermal Ana is Applications, 200	llytica	al Tech	inique					
<i>b</i>	Н			ngle Source Precurso plid Films, 2003, 431					III-VI	2 Thi	n-Film Solar	
p	I	Chalcopyrite Mate	erials", <i>NASA</i>	v of Single Source Pr Conference Publica 001), pgs. 115-125.								
b	J			imetallic Thiocarbox ulfide Materials", <i>Ch</i>								
Examiner	:	ufiria Nasp	rið Son	ple D	ate C	onside	red	11/6	27/	64		
*Examine	/ :			s of whether citation is in c Include copy of this form							ough citation if	

Form PTO-1	449		MENT OF COMMERCE TRADEMARK OFFICE	ATTY. DOCKET NO. 35089US1					SERIAL NO. 10/698,118			
		en (AMION DIGO	ACTINE CIT	CATION!	APPLICANT:							
	Qui	PAATION DISC BY APPL	ICANIT.		Kulbinder K. Banger et al.							
l € F	EB 0	(USE SEP ERAL SHEE Page 5	TS IF NECESSAL of 6	RY)	1 ·					GROUP ART UNIT:		
No.	مدو	THE STATE OF THE S			Oc	tober	31, 20	003	n	ot yet	assigned	
			U.S. P.	ATENT DOCUM	ŒN	TS						
Examiner Initial		Document No.			Clas	ss	Subc	lass	Filing Date If Appropriate			
	A											
	В											
	С		·									
			FOREIGN	PATENT DOC	UM	ENTS	<u> </u>					
		Document No.	Date	Country	· .	Cla	ss Subcla		class	1	Translation	
	D											
<u></u>		OTHER REFEI	RENCES (In	cluding Author, Title	e, Da	ite, Pei	rtinent	Pag	es, Etc	c.)		
	E			ulnS2 Prepared by S E Photovoltaic Speci								
1	F			ach Towards the Deproceedings, 2002, p				I Thi	in Filo	ns", <i>N</i>	faterials	
<i>b</i>	G			Single-Source Precur C. Chemistry, 2002, 1					e Thin	ı-Film	Solar	
A	Н		of Single Sou	odulation of Single S ree Precursors for De 4, 390-395.								
A .	I			ource Precursors to 01, 22, pgs. 2304-23		ary Sil	ver Inc	dium	Sulfic	de Ma	terials",	
	J	Low-Temperature	Deposition o	Facile Modulation an f Ternary Chalcopyr 0, 2001, American C	ite M	faterial	ls", <i>Ab</i>	strae	cts of I	Paper.		
A	K	Deivaraj, C.T., et Inorganica Chemi	al., "Synthesi ca Acta, 336,	s and Structure of [(2002, pgs. 111-114	Ph ₃ P)₂Ag(μ	-Cl)(μ	-SC	(O)Ph)In(SC	C{O}Ph)2]",	
Examiner	: /	Ufire May	aris In	ngally D	ate C	Conside	red	11/	27	104	3	
*Examine	f :			s of whether citation is in c Include copy of this form							ugh citation if	

Form PTO-1449		U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE					ATTY, DOCKET NO. 35089US1				SERIAL NO. 10/698,118		
					APPLICANT:								
	INF	ORMATION DISC	ICANT		Kulbinder K. Banger et al.								
	(USE SEVERAL S) FEETS IF NECESSARY) Page 6 of 6 FEB 0 2 2004							E:	U	GROUP ART UNIT:			
	BATER			·	Oct	tober	31, 2	2003	n	ot yet	assigned		
		ALTERNA	U.S. P.	ATENT DOCUM	ŒN]	TS							
Examiner Initial Document No. Date Name							Cl	ass	Subo	Subclass Filing Dr Appropri			
	Α												
	В												
	С												
			FOREIGN	N PATENT DOC	UMI	ENTS	3				·		
		Document No.	Date	Country		Cla	lass Sub		oclass 7		Translation		
	D												
		OTHER REFE	RENCES (In	cluding Author, Titl	e, Da	te, Pe	rtiner	t Pag	ges, Et	c.)			
b	E			zation of CulnS2 Fil Materials Science &									
1	F	Deposited on Sap	phire Substra Films Deposi	on Electron Microsco tes by Thermal Plass ited by Thermal Plass	na Sp	ray C	VD (Micro	structi	ire of			
b	G	Henderson, D., "C Materials & Desi		tructural Characteriz 7), pgs. 585-589.	zation	of Co	pper	Indiu	m Dis	ulfide	Thin Films",		
*	Н	Molecular Precur	sor for Bulk N	nd 13 Metal Thiocarl Metal Sulfide Materia of Materials, 2002, p	als an	d Thii							
*	I		Jin, M.H.C., et al., "The Effect of Film Composition on the Texture and Grain Size of CuInS ₂ Prepared by Chemical Spray Pyrolysis", <i>Mat. Res. Soc. Symp. Proc.</i> , Vol. 763, 2003, pgs. B8.23.1-B8.23.6.										
	J			1									
Examiner	: 7	bufiña Na	zario G	ngill 0	Date C	Conside	ered	1/	k7]	64			
*Examine	er:			ss of whether citation is in o Include copy of this form							ough citation if		

Form PTO-1	449			ENT OF COMMERCE RADEMARK OFFICE	ATTY. DO	CKET NO. 35089US	-	IAL NO. 98,118		
	INFO	DRMATION DISCI BY APPL (USE SEVERAL SHEE	APPLICAN K FILING	Kulbinder		Banger et al. GROUP ART				
		Page 10	of 1	, i		31, 2003	UNI	T: 1621		
			U.S. PA	TEMT DOCUM	ENTS					
Examiner Initial		Document No.	Date	Name		Class	Subclas	S Filing Date II Appropriate		
	Α									
	В	-								
	С									
			FOREIGN	PATENT DOC	UMENT	S				
		Document No.	Date	Country	Cla	ass Sub	class	Translation		
	D									
		OTHER REFER	RENCES (Inc	luding Author, Title	e, Date, Pe	ertinent Pag	ges, Etc.)			
de	Е			ltinary Solar Cells nce, 1993, pp. 372-		CuInSe ₂ ", Pa	roc. 23 rd 1	EEE		
do	F	Deposited on Sapp	phire Substrate Films Deposit	n Electron Microsco es by Thermal Plass ed by Thermal Plass	na Spray C	VD (Micro	structure	of		
A	G			ay Chemical Vapor es", Mat. Res. Soc.						
d	Н	Jin, M. H., et al., Conference Recor	Thin Film Cu d of the 29th II	alnS2 Prepared by S EEE Photovoltaic S	ared by Spray Pyrolysis with Single-Source Precursors' voltaic Specialists Conference, 2002, pp. 672-675.					
þ	Harris, J.D., et al., "Using Single Source Precursors and Spray Chemical Vapor Deposition Grow Thin-Film CuInS ₂ ", Proc. of the 28th IEEE Photovoltaic Specialists Conference, 200 563-566.						eposition to nce, 2000, pp.			
	1		1							
Examiner	Joh	fire Majar	in finza	iles	ate Consid	ered ///	27/04	4		
*Examine	7 7	Initial if reference con	sidered, regardless	of whether citation is in o	conformance v	vith MPEP 609 nmunication to); Draw line applicant.	through citation i		

.